



STATEMENT OF BASIS FOR IMPLEMENTING CORRECTIVE ACTION

**SANTOLUBES MANUFACTURING, LLC
dba BLACKMAN UHLER SPECIALTIES
SPARTANBURG, SPARTANBURG COUNTY, SOUTH CAROLINA
SCD 003 349 065**

PURPOSE OF THE STATEMENT OF BASIS

This Statement of Basis has been prepared to inform the public and provide an opportunity to comment on the proposed corrective action for solid waste management units (SWMUs) and areas of concern (AOCs) at the Santolubes Manufacturing Site (former Blackman Uhler Chemical Company). The Santolubes Site is located at 2155 West Croft Circle, Spartanburg, SC 29302 having the facility identification number SCD 003 349 065.

Several Corrective Measures Study (CMS) Reports approved by the Department between 1999 and 2003 propose corrective action for soil and groundwater at sixteen SWMUs and areas of concern (AOCs) at the Santolubes Site. A list of the SWMUs and AOCs and the proposed corrective measures are provided in Table 1 on Page 2. For contaminated soils the CMS Reports propose the following corrective measures:

- **Waste Excavation and Consolidation within a Corrective Action Management Unit Constructed at the Site**
- **Capping In Place**
- **Land Use Controls**
- **Groundwater Recovery with Effectiveness Monitoring** is proposed as the corrective measure for groundwater contamination at the facility

A Corrective Action Management Unit (CAMU) was constructed at the Site between 2003 and 2005. Wastes were excavated from seven SWMUs (SWMUs 2,3,4,6,7,8, and 10), consolidated within the CAMU and capped. These activities were approved by the Department as the final corrective measures for these seven SWMUs in 2001. The Department's decision was published in the Spartanburg Herald Journal Newspaper on May 21 through May 23, 2001 and mailed to landowners neighboring the Site. The Statement of Basis provides additional information on the corrective measures already approved for the seven SWMUs mentioned above and information on how the public can be involved in the remedy selection process for the remaining SWMUs and AOCs. **Groundwater Recovery with Effectiveness Monitoring** combined with **Land Use Controls** are proposed as the corrective measures for groundwater contamination at the Site.

The South Carolina Department of Health and Environmental Control (SC DHEC) has determined that the proposed corrective action should be sufficient to protect human health and the environment. However, prior to final approval of the proposed corrective action, the public has an opportunity to comment on the proposed corrective action. At any time during the public comment period, the public may comment as described in the "How Do You Participate?" section. Upon closure of the public comment period, SC DHEC will evaluate all comments and questions and determine if there is a need to modify the proposed corrective action.

TABLE 1: LIST OF SOLID WASTE MANAGEMENT UNITS/AREAS OF CONCERN FOR WHICH REMEDIES HAVE BEEN APPROVED OR ARE PROPOSED HEREIN:

SWMU ID	DESCRIPTION	FINAL REMEDY	REFERENCE DOCUMENT
SWMU 1	Inactive Surface Impoundment	Cap in Place Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, revised 5/01, and modified 6/5/03 (Depratter to File, 7/29/03)
SWMU 2	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, revised 5/01; Construction Quality Assurance Report, CAMU Cell 1, dated June 2003
SWMU 3	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, Revised 5//01; Construction Quality Assurance Report, CAMU Cell 1, dated June 2003
SWMU 4	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, Revised 5/01; Construction Quality Assurance Report, CAMU Cell 1, dated June 2003
SWMU 5	Inactive Surface Impoundment	Cap in Place Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, Revised 5/01; Construction Quality Assurance Report, CAMU Cell#1, dated June 2003
SWMU 6	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls Site-Wide GW Monitoring	CAMU Permit Modification Request, revised 5/01; Construction Quality Assurance Report, CAMU Cell #1, dated June 2003
SWMU 7	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls GW Monitoring at CAMU	CAMU Permit Modification Request, Revised 5/01; Construction Quality Assurance Report, CAMU Cell#1, dated, June 2003

SWMU 8	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls GW Monitoring at CAMU	CAMU Permit Modification Request, revised 5/01; Construction Quality Assurance Report, CAMU Cell#1, dated June 2003
SWMU 9	Overflow Basin	Incorporation into Cell 2 of CAMU GW Monitoring at CAMU	CAMU Permit Modification Permit Request, revised 5/01, and modified 6/5/03 (DePratter to File, 7/29/03)
SWMU 10	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Land Use Controls GW Monitoring at CAMU	SWMU 10 Corrective Measures Implementation Report dated 2/01; Construction Quality Assurance Report, CAMU Cell #1, dated June 2003
SWMU 13	Inactive Surface Impoundment	Incorporation into Cell 1 of CAMU Site-Wide GW Monitoring	Approval of the Revised CMS Report (DePratter to O'Dell, 7/11/02) Construction Quality Assurance Report, CAMU Cell #1, dated June 2003
SWMU 14	Stormwater Retention Pond	Incorporation into Cell 1 and Cell 2 of CAMU Site-Wide GW Monitoring	Corrective Measures Investigation Sampling and Analyses-SWMU 14, dated September 2003; Construction Quality Assurance Report, CAMU Cell #1, dated June 2003
SWMU 24	Process Sewer System	Replaced Site-Wide GW Monitoring	RCRA Facility Investigation Report of Findings – SWMU 24 Process Sewer Line, revised May 2003
SWMU 25	Empty Drum Storage Area	Removed during Excavation of SWMU 10 Site-Wide GW Monitoring	SWMU 10 Corrective Measures Implementation Report dated 2/01; Construction Quality Assurance Report, CAMU Cell 1, dated June 2003
SWMU 26	Empty Drum Storage Area	Cap in Place Land Use Controls Site-Wide GW Monitoring	CMS Report, revised 1/01
AOC Bldg 8	Soil Contamination below Building 8	Cap in Place Land Use Controls Site-Wide GW Monitoring	CMS Report, revised 1/01

HOW DO YOU PARTICIPATE?

The SC DHEC solicits public review and comment prior to approval of the proposed corrective action for the SWMUs and AOCs. The public comment period for the proposed corrective action will begin on August 15, 2011 and will end 45 days later on September 29, 2011.

The Statement of Basis and the documents associated with the investigations and corrective actions proposed for the site will be available to the public for review during regular business hours, Monday through Friday, except legal holidays at the following locations:

SC DHEC, Region 2 Office
900 South Pine Street, Suite 2A
Spartanburg, SC 29302

SC DHEC
Bureau of Land and Waste Management
8911 Farrow Road
Columbia, SC 29203

Any comments on the proposed corrective action and/or requests for a public hearing should be sent to:

Richard Haynes, P.E., Director
Division of Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201
Phone: (803) 896-4070

Email: haynesra@dhec.sc.gov

To be considered, all requests and/or comments must be received in writing no later than September 29, 2011, at which time the forty-five (45) day public comment period will end.

FACILITY DESCRIPTION

The Santolubes facility (former Blackman Uhler Chemical Company) is located approximately two miles southeast of the City of Spartanburg, South Carolina at 2155 West Croft Circle. Santolubes Holdings, LLC purchased the manufacturing operations of the Blackman Uhler Chemical Company (BUCC) on October 2, 2009 and began operation of the facility as Santolubes Manufacturing LLC doing business as (dba) Blackman Uhler Specialties. Blackman Uhler Chemical Company began operation in 1954 in a single building originally built as an Officer's Club for the U.S. Army Camp Croft, a World War II Training Base. The operating portion of the facility now consists of

approximately 41 acres of land and includes production facilities, warehouses and laboratories, waste management areas and administrative buildings. Santolubes manufactures specialty organic chemicals for agriculture, paper manufacturing, and the oil industry. Raw materials used for specialty chemical production include: acids, bases, solvents, aromatics, salts, and other inorganic and organic chemicals.

SITE HISTORY

Santolubes has requested to renew their hazardous waste permit for postclosure care of a surface impoundment that managed methanol solutions prior to 1982. The location of this impoundment, designated as SWMU 17, is shown in Figure 1, Page 11. The methanol solutions were determined to be hazardous waste due to the characteristic of corrosivity, as well as the presence of spent non-halogenated solvents (F003). The impoundment was certified closed on November 3, 1987. Sludges and saturated soils were removed, the basin reconfigured, and two high density polyethylene liners with a leachate collection system in between, were installed during closure to form an aeration basin. The aeration basin now manages nonhazardous wastewaters at the Site. Because contaminated soils were left in place at the time of closure, and because elevated levels of hazardous constituents have been detected in groundwater downgradient of the former surface impoundment, postclosure care is required for this unit. The permit for the Site addresses, in part, groundwater monitoring and remediation to be conducted during the postclosure care period to remediate releases from the former surface impoundment.

In 1990 the Blackman Uhler Chemical Company (BUCC) installed a groundwater recovery and treatment system consisting of three deep bedrock recovery wells (GM-18, GM-20, and GM-24). The groundwater contamination is the result of releases from the former hazardous waste unit (surface impoundment) and the SWMUs/AOCs across the site. The predominant groundwater contaminants at the site are the following semi-volatile organic compounds: 5-chloro-2 methyl benzenamine (CMB), o-Toluidine-hydrochloride, p-chloroaniline, p-chloro-m-cresol, 5-Nitro-toluidine, and chlorobenzene. The recovered groundwater is sent to a air stripping tower on the Site to reduce volatile organics in the recovered groundwater prior to discharge to the City of Spartanburg sewer system. The groundwater recovery system removes approximately 60 million gallons of groundwater from the saprolite and bedrock aquifers each year.

On August 10, 1999, the Department issued Blackman Uhler a hazardous waste permit. The permit contained conditions for conducting postclosure care of the former surface impoundment (SWMU 17) and conducting investigations at additional areas at the Site. The Permit also required a Corrective Measures Study for 16 of the 30 SWMUs/AOCs identified in the 1999 Permit. Figure 1 on Page 2 shows the location of the 30 SWMUs identified in the 1999 Permit. The requirements for additional investigations and a CMS were fulfilled over an approximate

four-year period between 1999 and 2003. The results of the investigations and the CMS were reported in numerous documents prepared for individual and/or groups of SWMUs and AOCs. By the end of 2003, the CMS reports and site investigations had identified and proposed corrective measures for 16 SWMUs and AOCs. These units are listed in Table 1 on Page 2.

Corrective actions for contaminated soil at the Site, to date, have focused on removing wastewater treatment sludge and contaminated subsoil from six former surface impoundments (SWMUs 2, 3, 4, 5, 10 and 13), one overflow basin (SWMU 9), and one stormwater retention basin (SUMU 14) and consolidating the waste within a Corrective Action Management unit (see CAMU in Figure 1, Page 11). The CAMU was constructed between 2003 and 2005 on top of SWMUs 6, 7, and 8, effectively capping these units in place. The most recent corrective action activities at the site include capping in place SWMUs 1 and 5 and the Building 8 AOC in 2009.

PROPOSED CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

In 2001, the Blackman Uhler Chemical Company (BUCC) proposed to excavate SWMUs 1 through 5, and SWMU 10 with subsequent waste consolidation within a CAMU placed over SWMUs 6, 7, and 8, thereby capping SWMUs 6, 7 and 8 in place. No comments were received regarding the construction of a CAMU at the BUCC site during the May 2001 public notice. Construction of the CAMU was approved by the Department on December 27, 2001. Subsequent to this approval, the Department approved capping SWMUs 1 and 5 in place rather than consolidating these units in the CAMU. No changes in the approved remedies for SWMUs 2, 3, 4, 6, 7, 8, and 10 have been suggested since the original public notice in May 2000. Therefore, the Permit renewal will incorporate **Waste Excavation and Consolidation within a Corrective Action Management Unit** with **Land Use Controls** as the final remedy for the following: SWMUs 2, 3, 4, 6, 7, 8, and 10. Proposed corrective measures for the remaining SWMUS requiring corrective action are presented as follows:

SWMU 1

In 2001 BUCC initially proposed to excavate 2,800 cubic yards of wastewater treatment sludge and contaminated soil from SWMU 1, an inactive wastewater treatment impoundment, and consolidate the sludge and soil within the CAMU. In 2003 BUCC proposed that SWMU 1 be capped in place in lieu of being removed. The Department approved this request and the SWMU was covered in 2009 with an impermeable cap designed to prevent direct exposure to the wastes and eliminate the migration of contaminants from the waste into groundwater. The Department recommends that the impermeable cap (**Capping In Place**) and appropriate **Land Use Controls** be incorporated into the hazardous waste permit as the final corrective measures for SWMU 1.

SWMU 5

In 2001 BUCC initially proposed to excavate waste from SWMU 5, an inactive surface impoundment used to manage sodium acetate, acid and pigment wastes, and consolidate the waste within the CAMU. BUCC later requested that these wastes remain in place due to the small waste volume (23 cubic yards), the presence of a low-permeability clay layer already providing a cap for the waste, and hazards involved in excavating the wastes near buried and above-ground high voltage lines. The Department approved the request and the area above the SWMU 5 wastes was reconstructed to prevent the accumulation of standing water and resurfaced with an asphalt cover. The Department proposes **Capping In Place** with the low-permeability clay and asphalt caps with **Land Use Controls** as the final remedy for SWMU 5.

SWMU 9

In 2001 BUCC initially proposed to cap SWMU 9 leaving approximately 850 cubic yards of wastewater treatment sludge in place. Because the sludge was exposed near the surface and presented a potential exposure risk, BUCC requested a change in their proposed remedy to excavate the sludge and contaminated subsoil and consolidate this remediation waste within the CAMU. The excavation and consolidation of the SWMU 9 waste material into the CAMU was completed in 2005. The Department proposes the **Waste Excavation and Consolidation within a Corrective Action Management Unit** already completed as the final corrective measure for SWMU 9.

SWMU 13

BUCC uncovered an abandoned wastewater treatment lagoon (SWMU 13) during abandonment of the process sewer system (SWMU 24). Approximately ten cubic yards of backfilled soils with minor inclusions of “stained soil and wastewater treatment sludge” were excavated from SWMU 13 on October 17, 2002. These wastes were consolidated within the CAMU. The Department proposes the **Waste Excavation and Consolidation within a Corrective Action Management Unit** already completed as the final corrective measure for SWMU 13.

SWMU 14

SWMU #14 was a stormwater retention pond that intermittently contained standing water. Initial sampling of the bottom sediment and surface water was conducted in 1994. Background range metals and trace amounts of acetone and methylene chloride (common laboratory contaminants) were detected. Consequently, BUCC recommended no further action for SWMU 14. In June 2002, BUCC began recontouring soils in the SWMU area in preparation for the construction of a new wastewater treatment equalization basin. During construction of the basin, BUCC uncovered buried wastewater treatment sludge. Approximately 80 cubic yards of sludge and contaminated subsoils were removed from the construction area as an interim measure and

consolidated within the CAMU. During the excavation activities soil samples were collected to determine the full extent of the waste volume at SWMU #14. In 2005, BUCC excavated all remaining wastes and an additional two to five foot layer of soil beneath the waste and consolidated this remediation waste within the CAMU. A total of approximately 1,172 cubic yards was excavated from varying depths in this SWMU. The Department proposes the corrective measure already completed for SWMU 14, **Waste Excavation and Consolidation within a Corrective Action Management Unit**, as the final corrective measure for SWMU 14.

SWMU 24

Videography revealed several areas of collapse and /or misalignment of BUCC's process wastewater sewer system (SWMU 24). During the Summer and Fall of 2002, BUCC upgraded the wastewater treatment system with the construction of two new equalization tanks, abandonment of the process sewer lines, and the installation of a new process sewer system. All of the old SWMU 24 process sewer lines and twenty-two manholes were abandoned in place by pouring approximately 25 cubic yards of grout into various sewer line segments and manholes. The Department proposed the abandonment of SWMU 24 as the final corrective measure for SWMU 24.

SWMU 25

SWMU 25 was an active drum storage pad consisting of a concrete pad that coincided with a portion of SWMU 10. Approximately 225 cubic yards of wastewater treatment sludge and contaminated subsoils were excavated from SWMU 10 as an interim corrective measure prior to placement of a 40 mil low density polyethylene liner and concrete cap over the SWMU 25 area. This cap was constructed as a chemical storage pad. The concrete cap and underlying liner covers any residual contaminants contained in the soils, and there is no potential for direct exposure to soil. The polyethylene liner eliminates the potential for exposure to soil vapors and the cap eliminates the potential for exposure for leaching for surface water or groundwater. The Department proposes that **Waste Excavation and Consolidation with A Corrective Action Management Unit** be the final corrective measure for SWMU 25.

SWMU 26

SWMU 26 was an empty drum storage gravel pad that was previous used for the temporary storage of empty drums awaiting pick-up by a recycler. Although this has not been used for drum storage for more than 10 years, a soil berm has been added to the outside edge of this SWMU to divert stormwater flow and control erosion due to the site run off. Analyses of soil samples collected from SWMU 26 indicated three locations where CMB exceeded risk-based levels. The contamination identified was located within the top six inches of soil. In 2009 BUCC excavated the areas impacted with CMB and backfilled the area with clean soil and gravel. The excavated area was backfilled with clean soil and gravel. The excavated soil was disposed of properly offsite. The Department proposes **Land Use Controls** measures as the final corrective measure

for SWMU 26. The area is currently used as a driveway for vehicular access. The roadway has been widened and an earthen berm was constructed on the north side of the roadway to direct storm water and control erosion along the slope.

Building 8 AOC

Building 8 was used prior to 1991 for the manufacture of specialty chemicals, primarily industrial salts. A subsurface investigation beneath the floor of Building 9 was completed in 1994 and 1995. In 1995 BUCC began a capital improvement project to remove Building 8. Additional soil samples collected in the former Building 8 Area confirm the absence of source material (i.e., buried wastewater treatment sludge). However, several contaminant concentrations detected in subsurface soil exceed levels protective of groundwater. BUCC proposed to cap the Building 8 AOC to prevent rainwater infiltration and potential leaching of subsurface contaminants. In 2009 a cap was placed over the Building 8 AOC. The cap consists of a concrete storage pad similar in design to the chemical storage pad on top of the former SWMU 10. A perforated drain line was installed in the crushed stone and was sloped to drain a PVC stub at the lower end. The stone layer was underlain by a geotextile fabric and a 40-mil polyethylene vapor barrier liner. The concrete pad is surrounded on three sides by an eight-inch concrete containment dike. The front of the storage pad has a ramp to allow fork truck access and the pad is sloped to the rear to prevent run-off. The Department proposes that the cap already constructed for the Building 8 AOC be the final corrective measure (**Cap In Place**). Appropriate **Land Use Controls** will be implemented with this corrective measure.

Site-Wide Groundwater

The primary source of groundwater contamination at the site was the former surface impoundment that was closed in 1987 (SWMU 17) and the SWMUs that were incorporated into the CAMU. A groundwater pump and treat system (recovery wells GM-18, GM-20, and GM-24) has been operational since 1990 and has been effective in reducing the size of the groundwater contamination plume. The recovery wells are installed in the deep bedrock beneath the Site. Pumping of the bedrock aquifer has dewatered a large volume of the overlying saprolite aquifer and promoted leakage from the saprolite aquifer, accelerating the transport of contaminants, into the underlying bedrock aquifer. The proposed corrective measure for groundwater contamination at the Site is continued operation of the pump and treat system with modifications of the system, if necessary, to increase its effectiveness in removing contaminants. Appropriate **Land Use Controls** would be put in place to prevent exposure to existing groundwater contamination on the Site.

A modification already proposed by Santolubes is turning off recovery well GM-18. Santolubes and the Department have determined that turning off well GM-18 and maximizing the pumping rates at wells GM-20 and GM-24 will create pumping conditions that are more favorable to removing groundwater contamination from the bedrock and saprolite aquifers. The public is

invited to comment on this proposed change as well as the corrective measures proposed for the SWMUS/AOCs discussed earlier in this document.

PUBLIC PARTICIPATION

To facilitate public participation in the corrective action process at the Site, the following actions have been taken:

- Established a local information repository
- Developed this Statement of Basis
- Prepared a mailing list and mailed this Statement of Basis, Fact Sheet and Public Notice to the facility mailing list

NEXT STEPS

Following the consideration of public comments by SC DHEC, a revised Final Decision and Response to Comments (FDRTC) accepting or rejecting the proposed corrective action will be issued.

